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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,370	11/18/2003	Ravi Verma	GP-303664	4401

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EXAMINER	
MORILLO, JANELL COMBS	
ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/716,370	VERMA ET AL.	
	Examiner	Art Unit	
	Janelle Combs-Morillo	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/9/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7, 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonker (US 6,280,543).

Zonker teaches a process of making an Al-Mg alloy sheet material with excellent formability (column 3 line 15) comprising the steps of: a) continuous casting a thin strip 17-23mm, b) hot rolling with an exit temperature of 200-400°C and a reduction of 50-90% (column 9 lines 57-58, 64-66) which would mean said strip is now 1.7-11.5 mm ($(\frac{i-f}{i} * \% = \%reduction)$, c) coiling the hot band (column 3 lines 9-10), d) annealing at 325-510°C for a sufficient time to recrystallize the microstructure (column 10 lines 1-6), e) cold rolling 25-90% which means the strip is now 0.17-8.6 mm (column 10 lines 7-8), as well as additional steps f) and g) discussed below.

Zonker teaches said process can be applied to Al-Mg alloys with 3.0-5.0% Mg, 0.05-0.6% Mn, 0.05-0.5% Cu, ≤ 0.4% Fe, ≤ 0.03% Si, balance aluminum (column 9 lines 50-54), which overlaps or touches the boundary of the presently claimed composition ranges.

Instant claim 1 recites "cold rolling said annealed strip through at least one cold rolling stage, without intermediate anneal, to effect a reduction of at least 50% in the thickness of the

hot rolled strip", while Zonker teaches additional steps f) interannealing and g) further cold rolling (an additional 70-95%) in order to reach a very thin sheet (column 10 lines 12-15). However, the examiner asserts that it would have been obvious to one of ordinary skill in the art to only perform steps a)-e) of Zonker in order to obtain a thicker sheet product. Changes in temperature, concentrations, or other process conditions of an old process does not impart patentability unless the recited ranges are critical, i.e. they produce a new and unexpected result. However, said parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In this case, it is recognized (as a result-effective variable) that further reduction provides a thinner sheet product, the optimum or workable ranges of said variable are characterized as routine experimentation.

Zonker does not teach a specific time at the annealing temperature. However, Zonker teaches annealing at 325-510°C for a sufficient time to recrystallize the microstructure (column 10 lines 1-6). Because the time at the annealing temperature is a result effective variable (wherein the expected result is a recrystallized microstructure), the optimum or workable ranges of said variable are characterized as routine experimentation.

Because Zonker teaches a process of working and heat treating an Al-Mg alloy strip of overlapping composition and substantially the same process steps as presently claimed, it is held that Zonker has created a prima facie case of obviousness of the presently claimed invention.

Concerning dependent claims 2-4 and 10, Zonker teaches an overlapping alloy composition as stated above.

Concerning dependent claims 4-6, Zonker teaches processing steps and parameters that fall within the instant ranges (see discussion above).

Concerning claims 9 and 12, Zonker does not teach the elongation at said temperature and strain rate. However, because the method of casting, working, and heat treating the Al-Mg alloy taught by Zonker is substantially similar to the prior art method and alloy, then substantially the same effects, such as elongation, are also expected to occur. The examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. The prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), see MPEP 2112.01.

Double Patenting

3. Claims 1-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/273432. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of US'432 are also drawn to casting, working, and heat treating that is substantially identical to the instant casting, working, and heat treating steps, and as applied to a substantially similar Al-Mg-Mn alloy. The annealing temperature range in the claims of US'432 significantly overlaps the instant annealing temperature range.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

4. Claims 8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and the ODP rejection is overcome.

The closest prior art, Zonker, teaches an ASTM grain size of 7.0 can be achieved by the instant process, which converts to 30 μm (see Zonker Tables 5 and 6, "Making, Shaping, and Treating of Steel p 1240). Zonker does not teach a method of continuous casting an Al-Mg thin strip, hot rolling, coiling, annealing, and cold rolling, thereby producing a recrystallized microstructure with a grain size no larger than about 10 μm, substantially as presently claimed. Additionally, though it is known to produce an Al-Mg alloy product with a fine grain size of ≤

10 μm (see Miyamoto US 4,619,712, etc), Miyamoto (alone, or in combination of Zonker, etc.) does not teach or suggest the instant process of obtaining said fine grained alloy product.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCM
May 18, 2005

GEORGE WYSZOMIERSKI
PRIMARY EXAMINER
GROUP 1700